

REMARKS

Claims 1, 2, 4-17, 19-31, 33-46, and 51-69 are currently pending. Applicants appreciatively acknowledge the Examiner's withdrawal of the rejection of claims 1, 2, 4, 12-14, 16, 17, 26, 27, 30, 31, 33, 40, and 41 under Calcaterra (US 4,810,567) upon reconsideration of Applicants' arguments filed April 3, 2006.

The Examiner in an Office Action mailed on July 7, 2006 rejected claims 1, 2, 5, 6, 8-14, 16, 17, 20-28, 30, 31, 34, 36-42, 51-53, 57-60, 64-66, 68, and 69 under 35 U.S.C. §102(e) as being anticipated by Perrault et al. US 6,039,940 ("*Perrault*"). In addition, the Examiner rejected under 35 U.S.C. §103(a) claims 4, 19, and 33 as being unpatentable over Perrault in view of Mao US 6,346,125 ("*Mao*"), claims 15, 29, 43-46, 54, 61, and 67 as being unpatentable over Perrault in view of Kolb et al. US 6,797,856 ("*Kolb*"), claims 7, 35, 56, and 63 as being unpatentable over Perrault, and claims 55 and 62 as being unpatentable over Perrault in view of Faries, Jr. et al. US 5,816,252 ("*Faries*"). Thus all of the Examiner's rejections under 35 U.S.C. §102(e) and §103(a) use Perrault as the principal reference.

The Examiner also provisionally rejected claims 1, 2, 6, 7-11, 15-17, 20-25, 29-31, 34-39, 43-46, and 51 on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claims 9-18 of copending Application No. 09/857,906.

Applicants' attorney appreciatively acknowledges the Examiner's courtesy in conducting an interview by telephone on August 21, 2006. The following statement of the arguments presented at the interview also documents Applicants' response to the Action of July 7, 2006. Applicants respectfully traverse the Examiner's §102(e) and §103(a) rejections of claims 1, 2, 4-17, 19-31, 33-46, and 51-69 and requests reconsideration and withdrawal of the rejections based on the following remarks.

REJECTION UNDER 35 U.S.C. §102(e) AS BEING ANTICIPATED BY PERRAULT

The Action rejects 1, 2, 5, 6, 8-14, 16, 17, 20-28, 30, 31, 34, 36-42, 51-53, 57-60, 64-66, 68, and 69 under 35 U.S.C. §102(e) as being anticipated by Perrault.

The Examiner rejects claims 1, 16, and 30 and asserts that Perrault discloses a material for absorbing biological fluids comprising a flexible substrate and a polymer of antimicrobial monomeric moieties, that the material is non-hydrolyzable and non-leachable and comprises a superabsorbent material, and that the polymer is covalently bonded to the substrate by non-siloxane bonds. Applicants respectfully disagree. Perrault does not disclose a substrate bonded to a polymer, but rather a flexible

support structure on the back of a hydrogel, col. 4 lines 48-49. Perrault does not disclose a bonding. Perrault's wound dressing is a hydrogel and suggests that a support structure may be physically, rather than chemically, incorporated with the hydrogel, col. 4 lines 50-57. Perrault also does not disclose a non-hydrolyzable and non-leachable material. Perrault suggests that a buffer system may be included in the hydrogels to prevent or slow the effect of hydrolysis, but does not suggest that the hydrogel is completely non-hydrolyzable, col. 7 lines 40-44. The hydrogels taught by Perrault require a buffer system because they are based on acrylate or acrylamide, and as such are susceptible to hydrolysis. Perrault also teaches that residual monomer concentrations of up to 3% are acceptable, col. 8 lines 40-42. Such a high level of residual monomer would undoubtedly result in release of active antimicrobial agent into a wound; therefore, the dressing is not non-leachable. As previously discussed, there is no discussion within Perrault concerning covalently bonding a polymer to a substrate by non-siloxane bonds as asserted by the Examiner. Perrault's dressing is merely a hydrogel that may include a physical support structure or backing that is not chemically bonded to a polymer. Thus, Perrault does not anticipate claim 1, 16, or 30.

The Examiner also rejects claims 2, 17, 31, and 51 and asserts that the monomeric moiety may be a quaternary ammonium. Applicants respectfully disagree. Although Perrault teaches a hydrogel that is comprised of a cationic quaternary amine polyacrylate, Perrault does not teach an antimicrobial polymer covalently bonded to a flexible substrate. Claims 2, 17, 31, and 51 are either independent claims or dependent claims that depend from independent claims that include a wound dressing comprised of a polymer covalently bonded to a substrate. Therefore, Perrault does not anticipate claim 2, 17, 31, or 51.

The Examiner also rejects claim 5 and asserts that the polymer taught by Perrault is completely polymerized, and therefore has a degree of polymerization of 100. Applicants respectfully disagree. Examiner incorrectly interprets the term "degree of polymerization" as a percentage. Applicants submit that the term is defined as "the number of monomeric units in a macromolecule or oligomer molecule, a block or a chain." IUPAC Compendium of Chemical Terminology, 2nd Edn. 1997 downloaded at <http://www.iupac.org/goldbook/D01569.pdf> and cited as 1996, 68, 2291. Also, as previously discussed, Perrault teaches a hydrogel in which residual monomer concentrations of up to 3% are acceptable, col. 8 lines 40-42. The polymer cannot be completely polymerized if there is residual monomer. Perrault also teaches polymerization which results in a hydrogel and not a polymer that is polymerized and covalently bonded to a substrate. Therefore, Perrault does not anticipate claim 5.

The Examiner also rejects claims 6, 20, and 34, and asserts that the material comprises an absorbent dressing. Applicants' respectfully disagree. Although Perrault discloses an absorbent hydrogel, claims 6, 20, and 34 depend on independent claims to a material comprised of a polymer covalently bonded to a substrate which is not taught by Perrault. Therefore, Perrault does not anticipate claims 6, 20, or 34.

The Examiner rejects claims 8, 22, and 36 and asserts that the Perrault discloses a flexible substrate comprised of synthetic polymers. Applicants' respectfully disagree. Perrault refers to a physical support structure as a substrate; however, the hydrogel wound dressing taught by Perrault is not covalently bonded to the support structure. The "substrate" as disclosed by Perrault is merely a physical backing that may incorporate an adhesive, col. 4, lines 48-57. Therefore, Perrault does not anticipate claims 8, 22, and 36.

The Examiner rejects claims 9-10, 23-24, and 37-38 and asserts that the polymer taught by Perrault is bonded to the substrate by a redox reaction catalyzed by a cerium-containing catalyst which results in an ether linkage. Applicants' respectfully disagree. The Examiner cites col. 7, lines 21-40 in support of the rejection; however, in col. 7, lines 21-40 Perrault describes the polymerization of the hydrogel which does not concern a redox reaction catalyzed by a cerium-containing catalyst. Perrault suggests using a catalyst such as α -hydroxy-1, α -dimethylacetophenone in DMSO and does teach a polymer bonded to a substrate. Instead, Perrault discloses a method of preparing a hydrogel by in situ polymerization of a monomer. Therefore, Perrault does not anticipate claims 9-10, 23-24, or 37-38.

The Examiner also rejects claims 11-14, 25-28, and 39-42 and asserts that the polymer is formed by polymerization of vinyl-containing monomers such as allyl amines and acrylamides. Although Perrault does disclose the polymerization of vinyl-containing monomers, claims 11-14, 25-28, and 39-42 depend on independent claims to a material comprised of a polymer covalently bonded to a substrate which is not taught by Perrault. Therefore, Perrault does not anticipate claims 11-14, 25-28, or 39-42.

The Examiner rejects claims 52, 59, and 66 and asserts that the moieties within the polymer disclosed by Perrault are bound by carbon-nitrogen bonds. The Examiner cites col. 4, lines 15-25 in support of the assertion. Applicants respectfully disagree. The Examiner incorrectly identifies the bonds depicted in Formula II within Perrault. The moiety depicted in Formula II demonstrates a carbon-carbon bond. Although Perrault discloses a polymer in which the monomeric moieties are bound by carbon-carbon bonds, claims 52, 59, and 66 depend on independent claims to a material comprised of a polymer covalently bonded to a substrate which is not taught by Perrault. Therefore, Perrault does not anticipate claims 52, 59, or 66.

The Examiner rejects claims 53, 58, 60, 65, and 68-69 and asserts that the Perrault discloses a substrate that is a non-woven fabric. Applicants' respectfully disagree. Perrault refers to a physical support structure as a substrate; however, the hydrogel wound dressing taught by Perrault is not covalently bonded to the support structure. The "substrate" as disclosed by Perrault is merely a physical backing that may incorporate an adhesive, col. 4, lines 48-57. Therefore, Perrault does not

anticipate claims 53, 58, 60, 65, or 68-69.

Finally, the Examiner rejects claims 57 and 64 and asserts that the substrate is a polyacrylate which is a polyurethane. Applicants' respectfully disagree. The Examiner fails to cite the column and line number which support the assertion; however, the only discussion within Perrault concerning polyacrylate concern the actual dressing which is a cationic quaternary amine polyacrylate gel. There is no discussion within Perrault concerning a polyacrylate substrate. Furthermore, a polyacrylate is not equivalent to a polyurethane. A polyurethane is a polymer consisting of several moieties of the urethane monomer which has a general structure of -NH(CO)O- . A polyacrylate is a polymer consisting of several moieties of the acrylate monomer, a double bonded carbon directly linked to a carbonyl carbon. Applicants' substrate is a polyurethane, which is not equivalent to a polyacrylate, and also covalently bonded to an antimicrobial polymer, unlike the substrate taught by Perrault. Therefore, Perrault does not anticipate claims 57 and 64.

**REJECTION UNDER 35 U.S.C. §103(a) AS BEING UNPATENTABLE OVER
PERRAULT IN VIEW OF MAO, KOLB, AND FARIES**

The Examiner rejects claims 4, 19, and 33 as being unpatentable over Perrault in view of Mao. The Examiner asserts that Perrault discloses all aspects of the claimed invention with the exception of moieties comprising a biguanide. The Examiner further asserts that Mao discloses a material for absorbing fluids comprising a flexible substrate having an antimicrobial polymer that may be a biguanide and concludes that it would have been obvious to a person having ordinary skill in the art at the time the invention was made to treat the substrate of Perrault with a biguanide. Applicants' respectfully disagree. As explained above, Perrault fails to disclose a polymer which is covalently bonded to a substrate; therefore, the combination of Perrault and Mao fails to provide all of the elements of Applicants' invention.

The Examiner rejects claims 15, 29, 43-46, 54, 61, and 67 as being unpatentable over Perrault in view of Kolb. The Examiner asserts that Perrault fails to disclose dimethyldiallylammonium chloride (DADMAC), but Kolb teaches the use of quaternary ammonium and DADMAC as equivalent compounds in the treatment of absorbent material for antimicrobial purposes and concludes that it would be obvious to a person having ordinary skill in the art at the time the invention was made to treat the substrate of Perrault with DADMAC. Applicants' respectfully disagree. As explained above, Perrault fails to disclose a polymer which is covalently bonded to a substrate; therefore, the combination of Perrault and Kolb fails to provide all of the elements of Applicants' invention.

The Examiner rejects claims 7, 35, 56, and 63 as being unpatentable over Perrault. The Examiner asserts that, with respect to claims 7 and 35, Perrault

discloses all aspects of the claimed invention with the exception of cellulose, and with respect to claims 56 and 63, Perrault discloses all aspects of the claimed invention with the exception of hemostatic agents. Applicants believe that the Examiner mistakenly included a typographical error in the Office Action and intended to further assert that the use of cellulose in wound dressings is well known in the art. The Examiner did assert that the use of hemostatic agents is well known in the art and finally concluded that it would have been obvious to a person having ordinary skill in the art at the time the invention was made to use cellulose or hemostatic agents with the material of Perrault. Applicants respectfully disagree. As explained above in addition to failing to disclose the use of cellulose and hemostatic agents, Perrault also fails to disclose a polymer which is covalently bonded to a substrate and it would not be obvious to a person having ordinary skill in the art at the time the invention was made to covalently bond a polymer to a substrate.

The Examiner rejects claims 55 and 62 as being unpatentable over Perrault in view of Faries. The Examiner asserts that Perrault discloses all aspects of the claimed invention with the exception of an indicator and Faries teaches the use of an indicator in a surgical drape to alert the presence of leaks. The Examiner concludes that it would have been obvious to a person having ordinary skill in the art at the time the invention was made to provide the material of Perrault with an indicator. Applicants respectfully disagree. Perrault fails to disclose a polymer which is covalently bonded to a substrate; therefore, the combination of Perrault and Kolb fails to provide all of the elements of Applicants' invention.

PROVISIONAL REJECTION FOR OBVIOUSNESS-TYPE DOUBLE PATENTING

The Examiner provisionally rejects claims 1, 2, 6, 7-11, 15-17, 20-25, 29-31, 34-39, 43-46 and 51 on the ground of nonstatutory obviousness-type double patenting over claims 9-18 of copending Application No. 09/857,906. Applicants' attorney told the Examiner that the copending application, as amended, has now been issued as U.S. Patent No. 7,045,673 B1 and is commonly owned with the present application. Applicant submits herewith a terminal disclaimer that overcomes the rejection on that basis.

CONCLUSION

For the foregoing reasons, Applicants submit that the claims presented herewith are patentable over the prior art of record and respectfully solicits prompt action thereon. If any questions remain, the Examiner is invited to phone the undersigned attorney.

Respectfully submitted:

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